We claim:

1. A conformable skin element system comprising one or more conformable skin elements, a controller, connections for coupling the conformable skin elements and the controller, a feedback control loop for generating and transmitting signals between the skin elements, the controller and the connections for conforming the skin elements to desired deformations.

2. The system of claim 1, wherein the controller is a micro-controller.

3. The system of claim 2, wherein the micro-controller comprises programmable computer chips for sensing and processing the signals from the feedback and for selectively activating the skin elements to desired deformations.

4. The system of claim 2, wherein the connections are electrical connections.

5. The system of claim 4, further comprising a power supply connected to the micro-controller.

6. The system of claim 1, wherein the skin elements are pressure-transducers and wherein the signals are pressure-transducer signals provided to the feedback loop.

7. The system of claim 6, wherein the feedback loop comprises amplifiers for amplifying the signals and filters for filtering the signals transmitted to the micro-controller.

8. The system of claim 1, further comprising a forebody formed by the skin elements, the forebody having a tip about a center of the forebody.

9. The system of claim 8, wherein the skin elements are disposed circumferentially about the tip in the forebody.

10. The system of claim 8, wherein the skin elements are single or multi-layered.

11. The system of claim 8, wherein the forebody comprises plural single-layered skin elements around the tip.

12. The system of claim 8, wherein the forebody comprises multiple layers of the skin elements around the tip.

13. The system of claim 8, wherein the forebody comprises the skin elements on either side of a windward ray.

14. The system of claim 13, wherein the skin elements on either side are about 50-120 degrees apart from each other.

15. The system of claim 1, wherein the skin elements are shaped elements.

16. The system of claim 15, wherein the shaped elements have shapes selected from a group consisting of triangular, rectangular, pentagonal, quadrilateral, circular, oval shapes, and combinations thereof.

17. The system of claim 15, wherein the shaped elements have a configuration of at least two sides.

18. The system of claim 17, wherein the shaped elements have a configuration of more than two sides.

19. The system of claim 1, further comprising a surface, wherein the skin elements are mounted on the surface.

20. The system of claim 19, wherein the surface is on a vehicle.

21. The system of claim 20, wherein the surface is on an aerodynamic part of the vehicle.

22. The system of claim 21, wherein each skin element has a vehicle conformable shape from a mounting perimeter after activation.

23. The system of claim 22, wherein the conformable shape corresponds to a mounting pattern of the skin elements on the surface.

24. The system of claim 1, wherein the system is an active vortex controller.

25. The system of claim 1, wherein the skin elements comprise actuatable material.

26. The system of claim 25, wherein the material is piezoelectric material.

27. The system of claim 26, wherein the piezoelectric material is selected from a group consisting of piezo-ceramic, piezo-ceramic with metal shim, piezoelectric bimorph, piezo-film, and combinations thereof.

28. The system of claim 25, wherein the actuatable material is selected from a group consisting of electrical, mechanical, electromechanical, electromagnetic, electrothermal actuatable material and combinations thereof.

29. The system of claim 25, wherein the material is selected from a group consisting of shape-changing materials sensitive to temperature, light, pneumatic, hydraulic, magnetic effects and combinations thereof.

30. The system of claim 25, wherein the material is selected from a group consisting of shape memory alloys, magnetic elements and combinations thereof.

31. Active vortex control apparatus comprising a surface, a skin element mounted on the surface, the skin element forming a pressure transducer and flow modifier on the surface, a micro-controller coupled to the skin element, a power supply connected to the micro-processor, a feedback loop communicating with the skin element and the micro-processor for controlling activation of the skin-element corresponding to surface pressures on the skin element.

32. The apparatus of claim 31, wherein the feedback loop is a closed-loop system.

33. The apparatus of claim 31, further comprising additional pressure transducers communicating with the feedback loop.

34. The apparatus of claim 33, wherein the additional pressure transducers are surface mounted taps.

35. The apparatus of claim 33, wherein the additional pressure transducers are manometers.

36. The apparatus of claim 31, further comprising wires communicating with the skin elements, the feedback loop, and the micro-controller for conducting voltage to the skin elements and for transmitting pressure signals from the skin element via the feedback loop to the micro-processor.

37. The apparatus of claim 31, further comprising mounts on

the surface for mounting the skin elements.

38. The apparatus of claim 37, wherein the mounts are selected from a group consisting of adhesive, clamps, screw, bolts, fasteners, and combinations thereof.

39. The apparatus of claim 37, wherein the mounts are on a perimeter of the skin element for allowing a bulge deflection of the skin element.

40. The apparatus of claim 37, wherein the mounts are cantilevered on the skin element for allowing a cantilever deflection of the skin element.

41. The apparatus of claim 31, wherein the surface is an aerodynamic forebody.

42. The apparatus of claim 41, further comprising plural skin elements mounted circumferentially about a tip of the forebody.

43. The apparatus of claim 42, wherein the plural skin elements comprise two skin elements mounted one on either side of a windward ray of the forebody.

44. The apparatus of claim 43, wherein the two skin elements are mounted about 50-120 degrees apart from each other.

45. The apparatus of claim 42, wherein the skin elements are evenly disposed about a nose of the forebody for accommodating roll variability.

46. The apparatus of claim 42, wherein the skin elements are concentrated on a windward half of the surface having no roll variability.

47. The apparatus of claim 42, wherein the skin elements are shaped elements.